



Armed Forces College of Medicine AFCM



Anatomy of the Parotid Gland

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هو حضور المحاضرات حلال ولا حرام



لو حلال ادينا بنحضرها

ولو حرام ادينا بننام فيها
وميتفهمش حاجه

INTENDED LEARNING OBJECTIVES (ILO)



• **By the end of this lecture the student will be able to:**

1. Describe position, shape, surfaces, borders and relations of parotid
2. Describe the course and site of opening of parotid duct
3. Recognize structures inside parotid gland and their clinically related problems
4. Discuss the nerve supply , blood supply and lymphatic drainage of parotid gland

Key Points

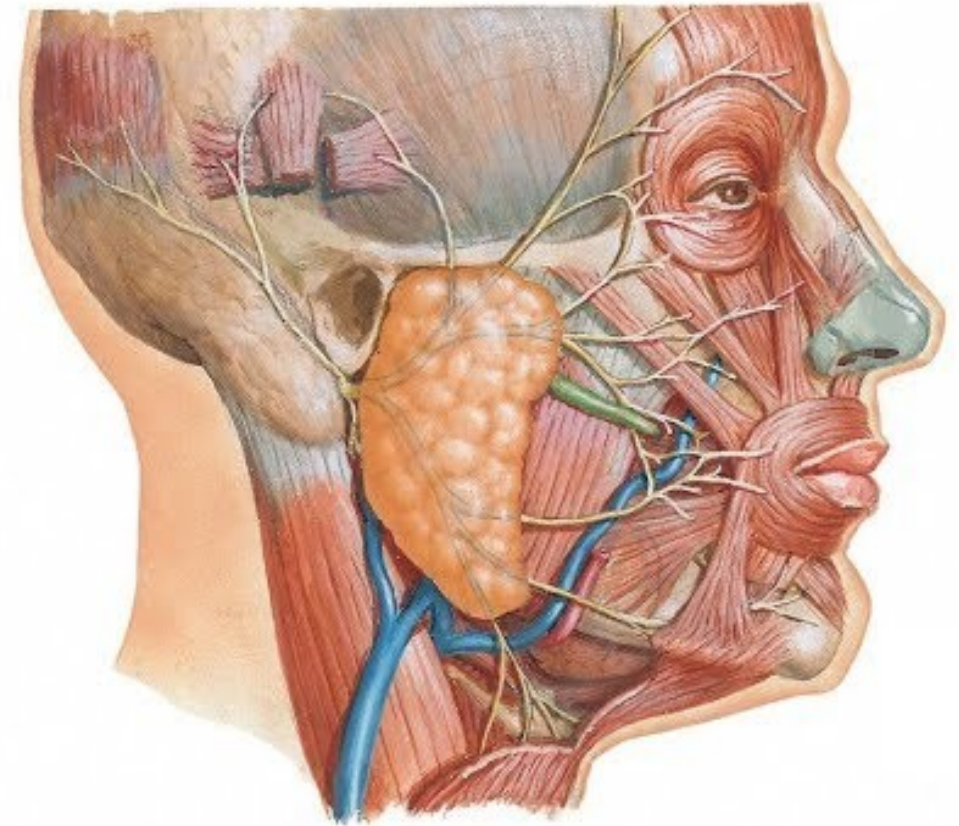


- 1. Anatomical features of parotid gland**
- 2. Structures inside parotid gland**
- 3. Parotid duct & Innervation of parotid gland**

Position



- **Wedged** between ramus of mandible & sternomastoid
- Its **upper end** fits into the external acoustic meatus
- Its **lower end** reaches down to the angle of the mandible



Shape

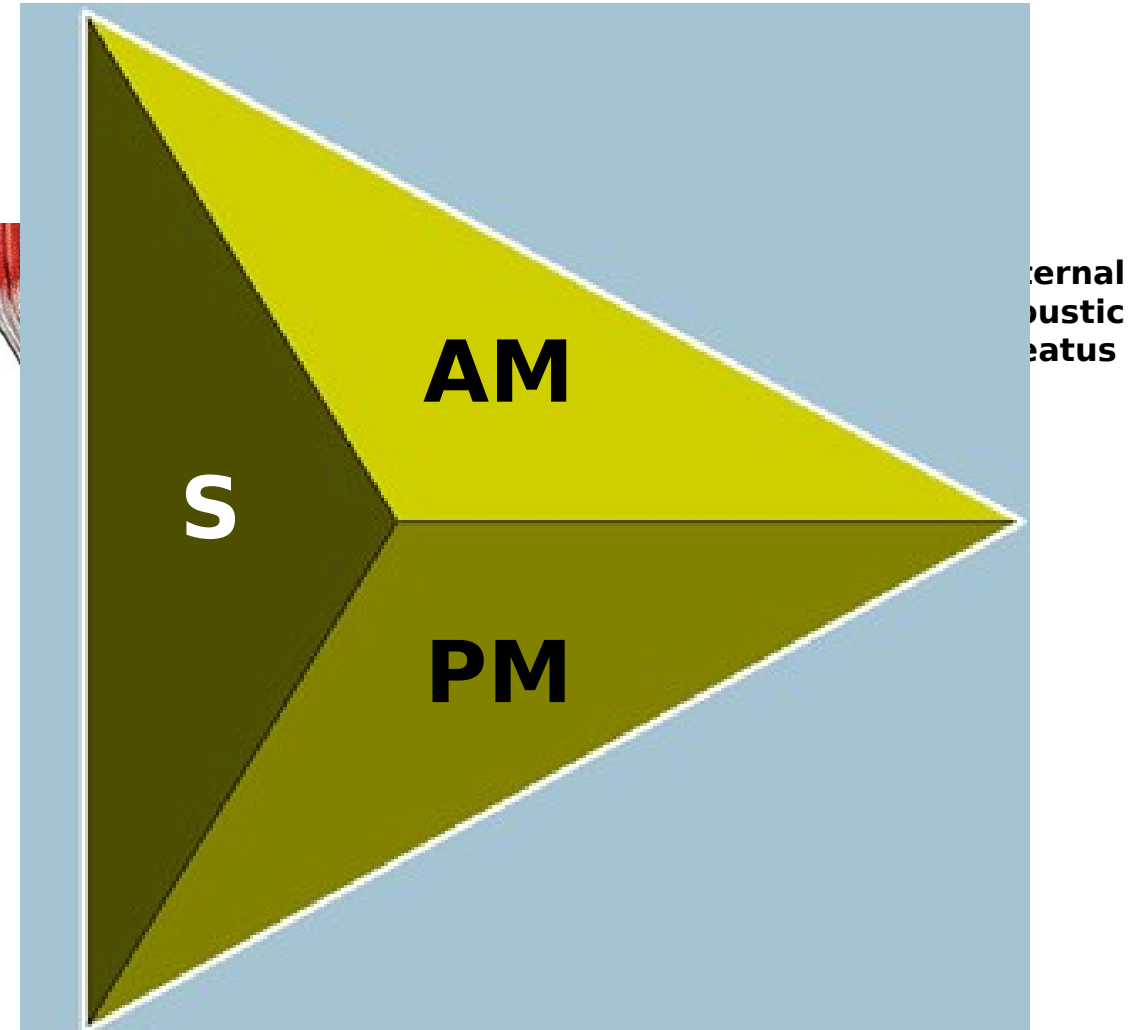


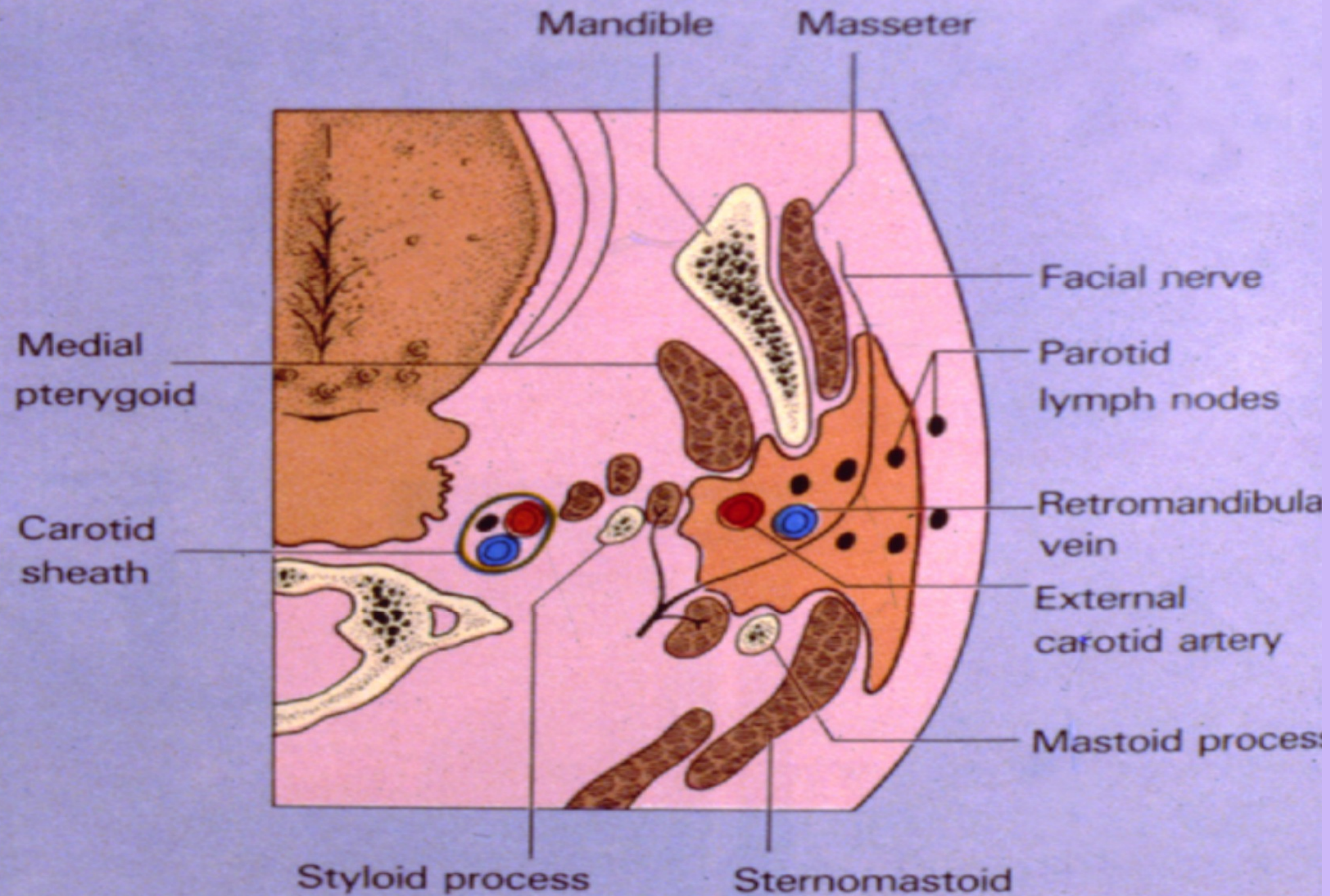
- **Inverted pyramid** has:

3 borders: anterior, posterior & Med.

3 surfaces: superficial, anteromedial & posteromedial

2 ends: upper (base) & lower (apex)





Relations



2 Ends : (Apex & base)

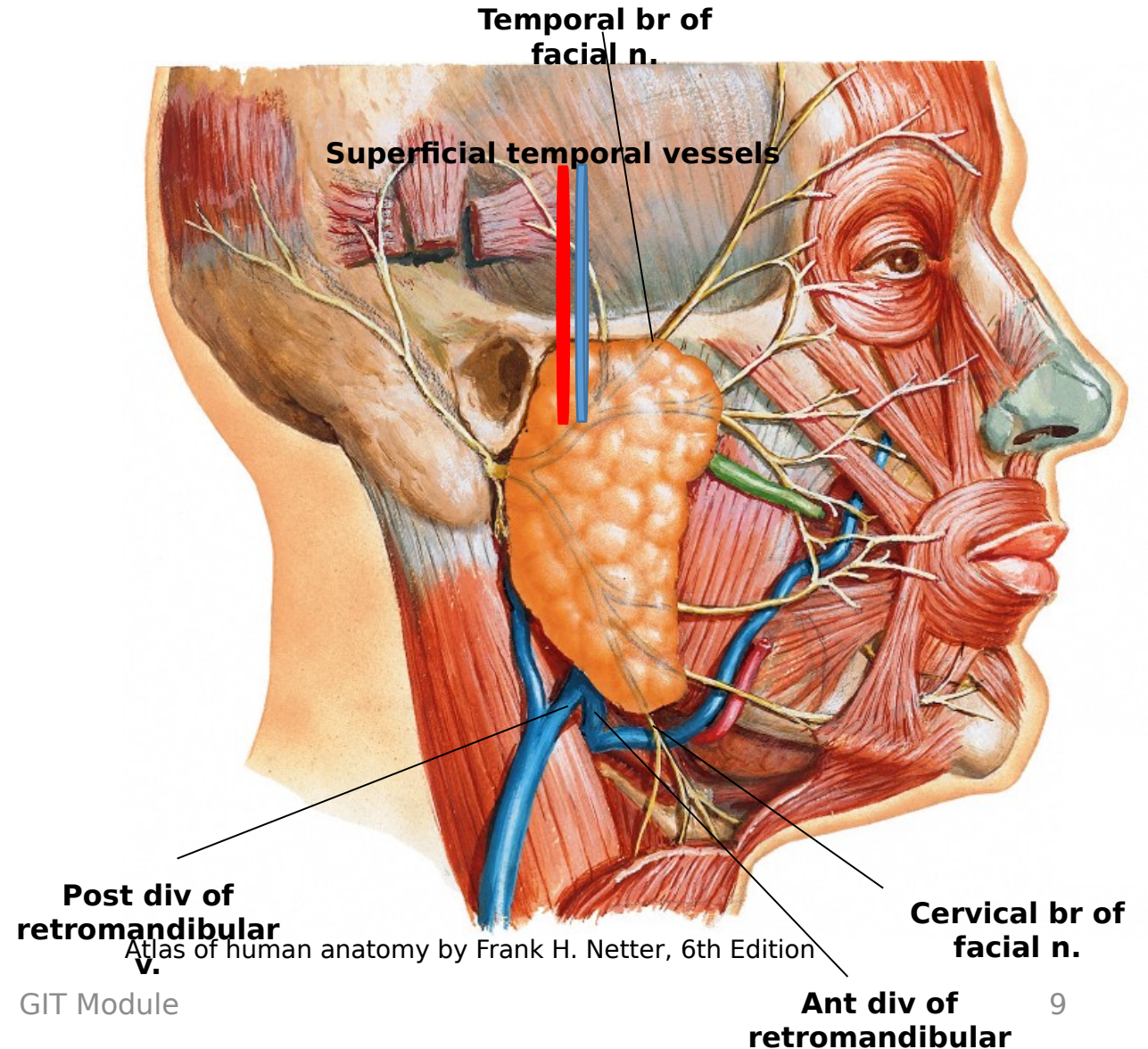
1) Apex:

- Is directed downward
- Through which pass 3

structures:

cervical branch
of facial nerve

New Five Year Program



GIT Module

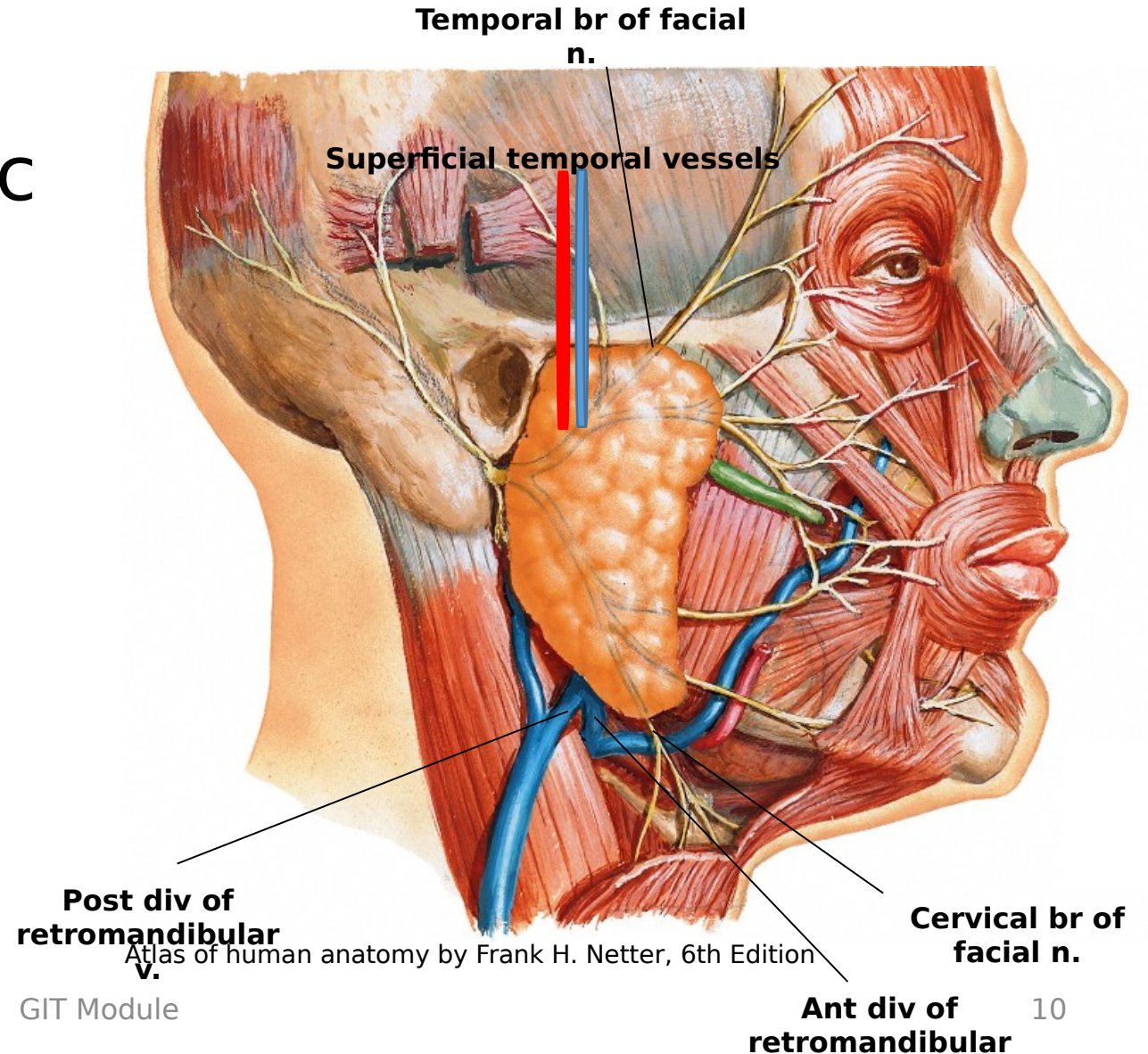
Relations



2) Base:

- Around external acoustic meatus
- Through which pass **3 structures:**

1. Temporal branch of facial nerve.
2. Superficial temporal vessels.
3. Auriculotemporal



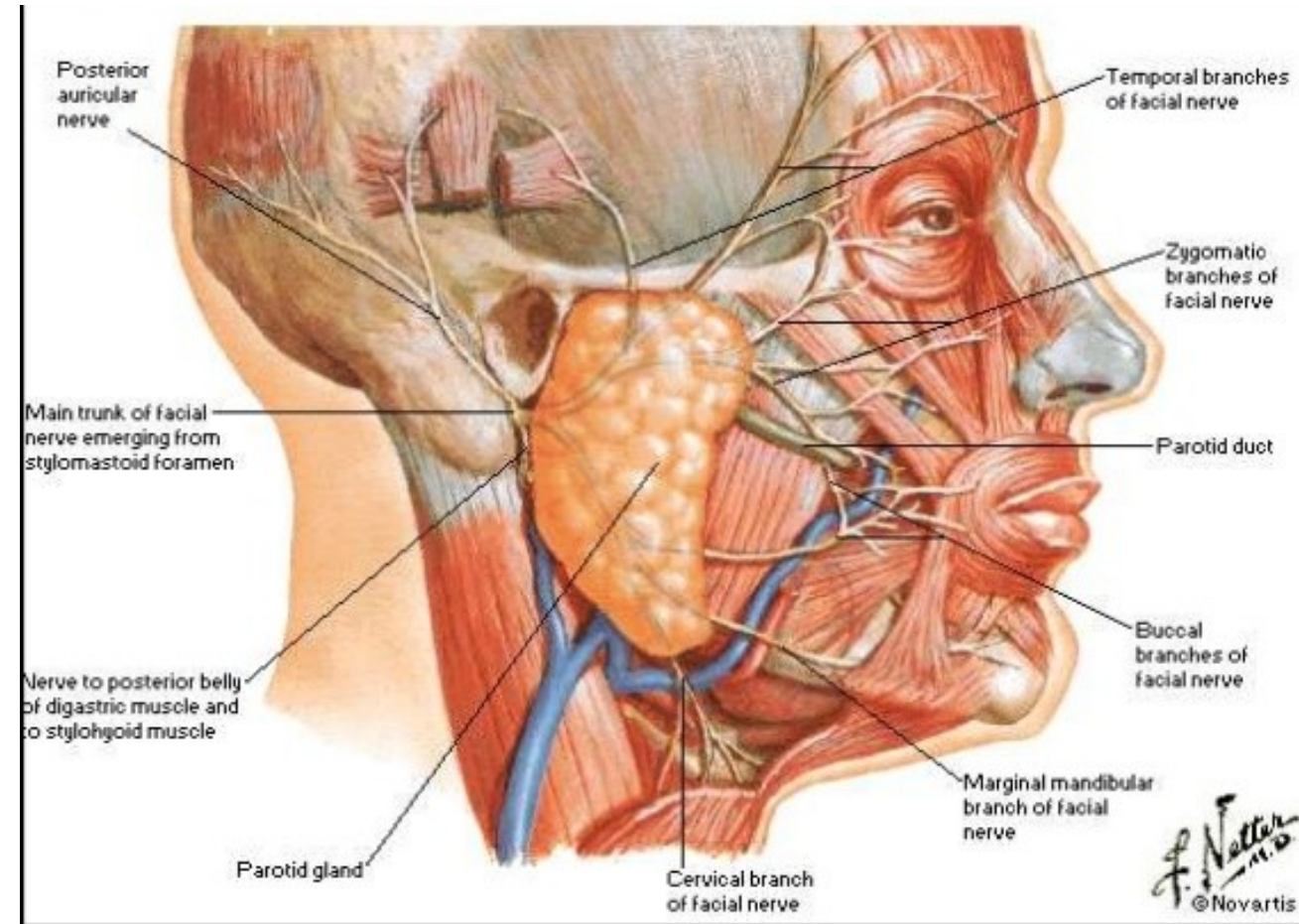
Relations



- 3 Borders (Ant, Post & Med)

1) Anterior border:

- Related to masseter
- **5 structures emerge** from above downwards:
 - Zygomatic branch of facial n.
 - Transverse facial artery
 - Parotid duct
 - Buccal branches of facial n.
 - Mandibular branch of facial n.



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Relations

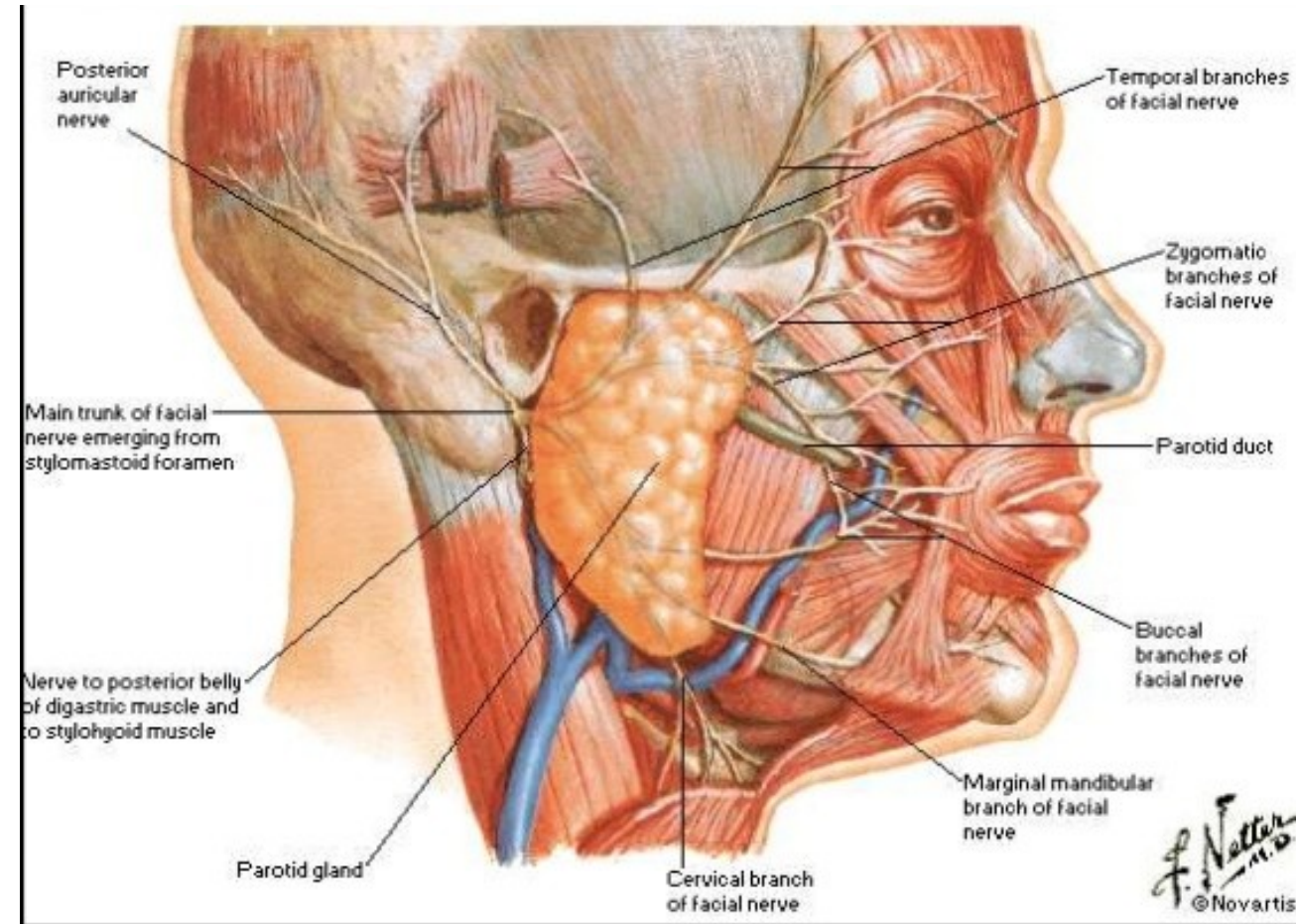


2) Posterior border:

- Related to sternomastoid

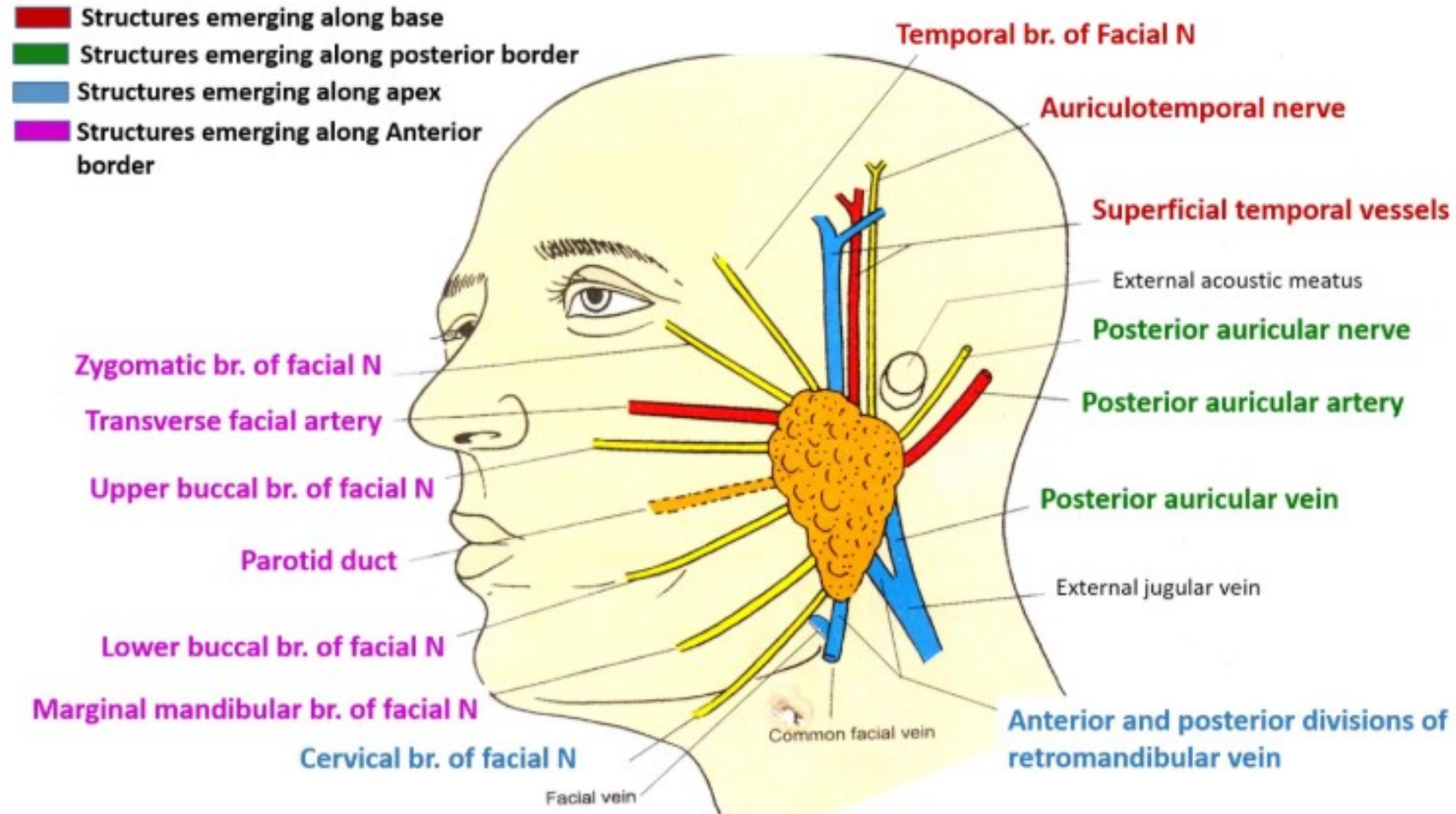
3) Medial border:

- Related to lateral wall of pharynx



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Relations



<http://www.anatomyqa.com/anatomy/important-question-and-answers-on-head-and-neck-anatomy/parotid-gl-and-anatomy/>

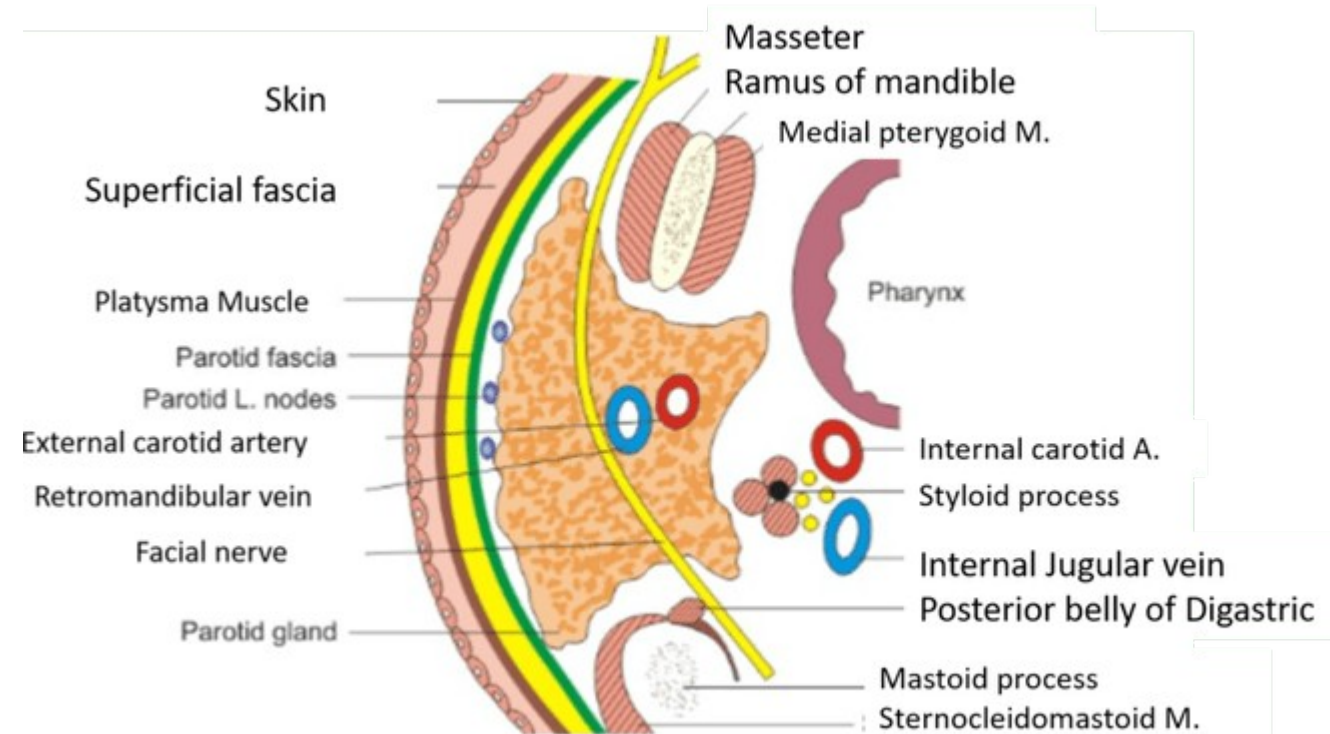
Relations



3 Surfaces

1) Superficial (Lateral):

- Skin, superficial fascia, platysma
- Great auricular nerve
- Preauricular lymph nodes (superficial parotid LN)



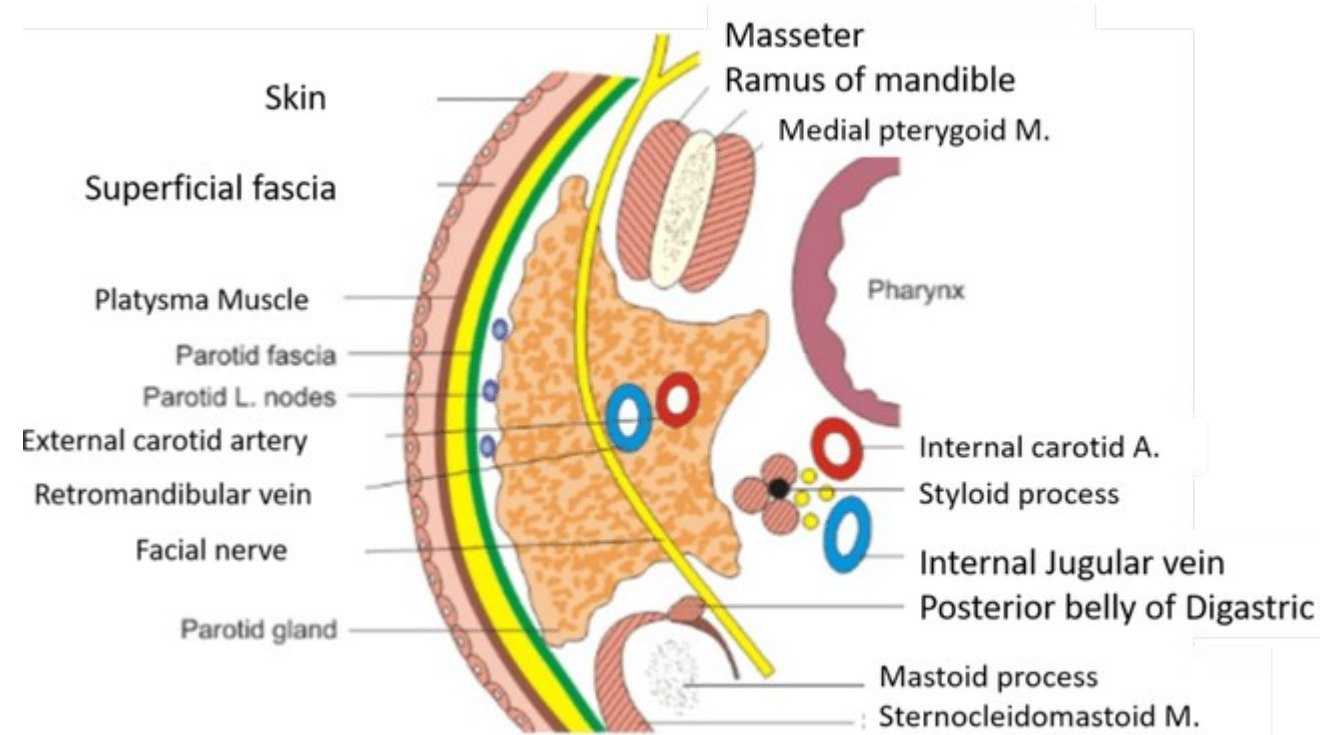
<http://www.anatomyqa.com/anatomy/important-question-and-answers-on-head-and-neck-anatomy/parotid-gland-anatomy/>

Relations

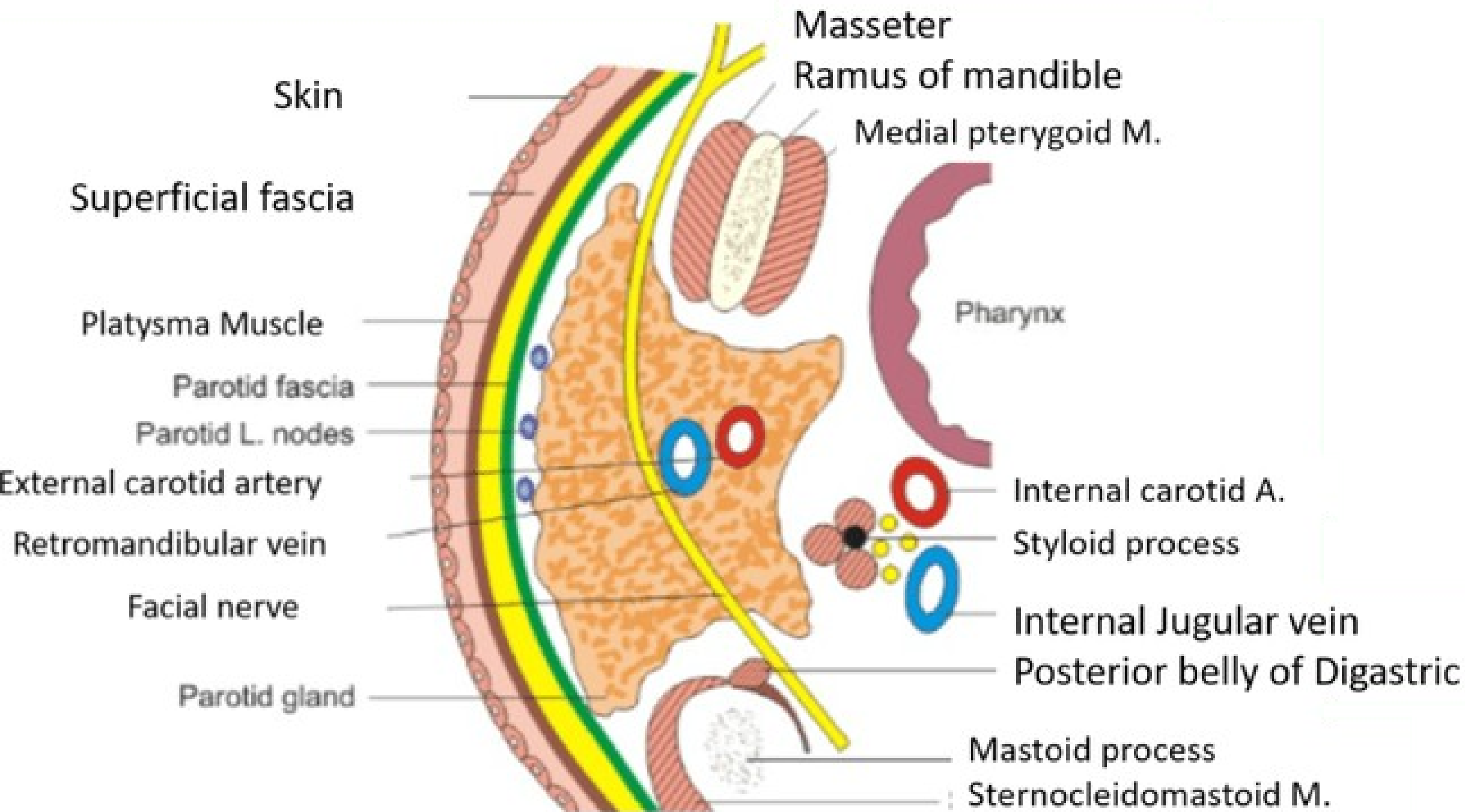


2) Anteromedial:
Mandibular ramus
with **Medial**
pterygoid (on its
inner surface) &
Masseter (on its
outer surface)

3) Posteromedial:
Mastoid
process (with 2
muscles
attached to it =
sternomastoid
& post. belly of



<http://www.anatomyqa.com/anatomy/important-question-and-answers-on-head-and-neck-anatomy/parotid-gland-anatomy/>



Lecture Quiz



Which of the following structures emerge from base of parotid gland?

- a) Parotid duct
- b) Auriculotemporal nerve
- c) Zygomatic branch of facial nerve
- d) Anterior division of retromandibular vein

Structures inside the gland

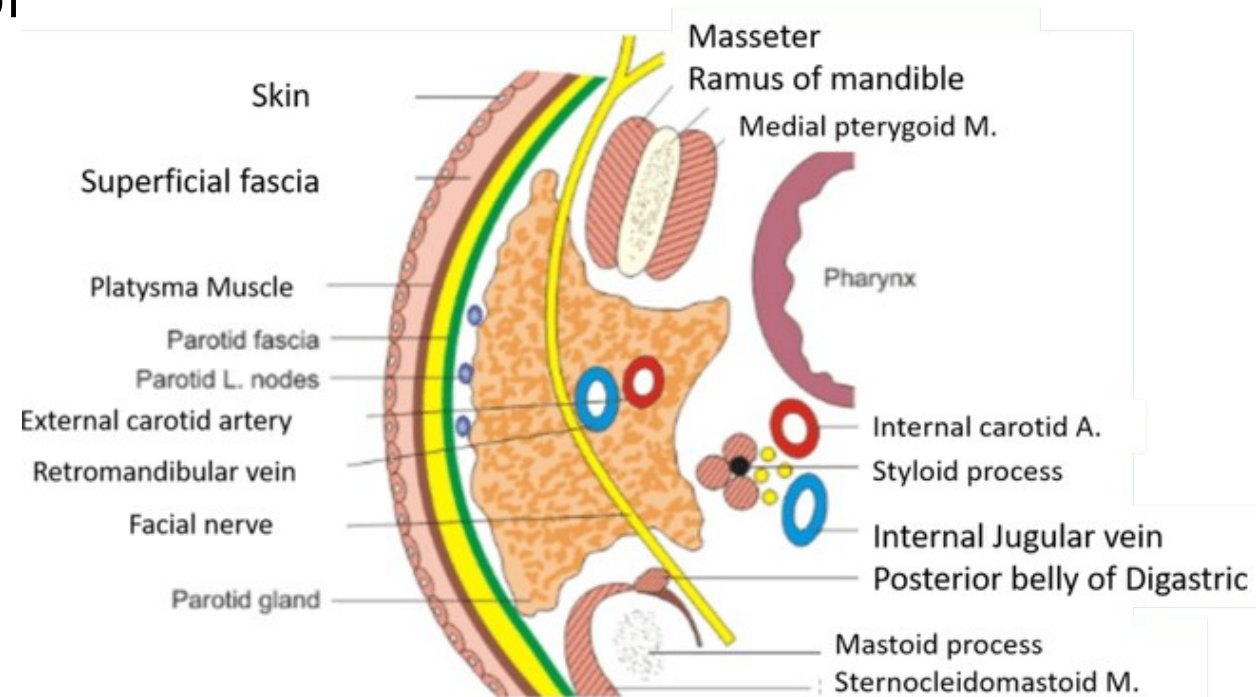


1) **ECA (most deep)** enters via posteromedial surface & divides at level of neck of mandible into **maxillary & superficial temporal artery**

2) **Retromandibular Vein:** formed inside the gland by union of maxillary and superficial temporal veins. It divides into ant. and post. div. that leave the gland through its apex.

3) **Facial Nerve: (most superficial)** enters via posteromedial surface, divides gland into superficial and deep parts. Then forms a plexus called **Pes Anserinus** & divides into its 5 terminal branches

4) **Deep parotid L.N.:** embedded within

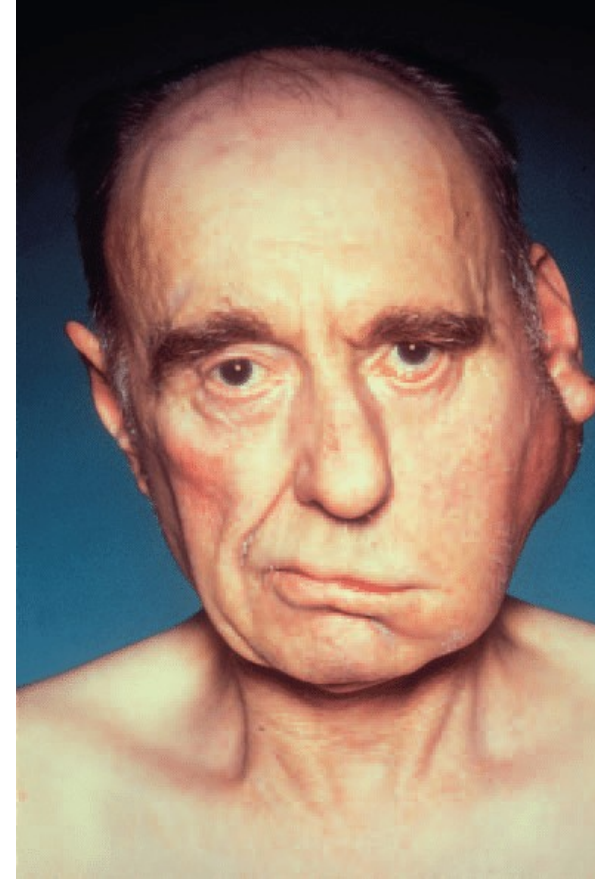


<http://www.anatomyqa.com/anatomy/important-question-and-answers-on-head-and-neck-anatomy/parotid-gland-anatomy/>

Facial Nerve Lesion



A malignant tumour of the parotid is usually highly invasive and involves the facial nerve, causing unilateral facial paralysis.

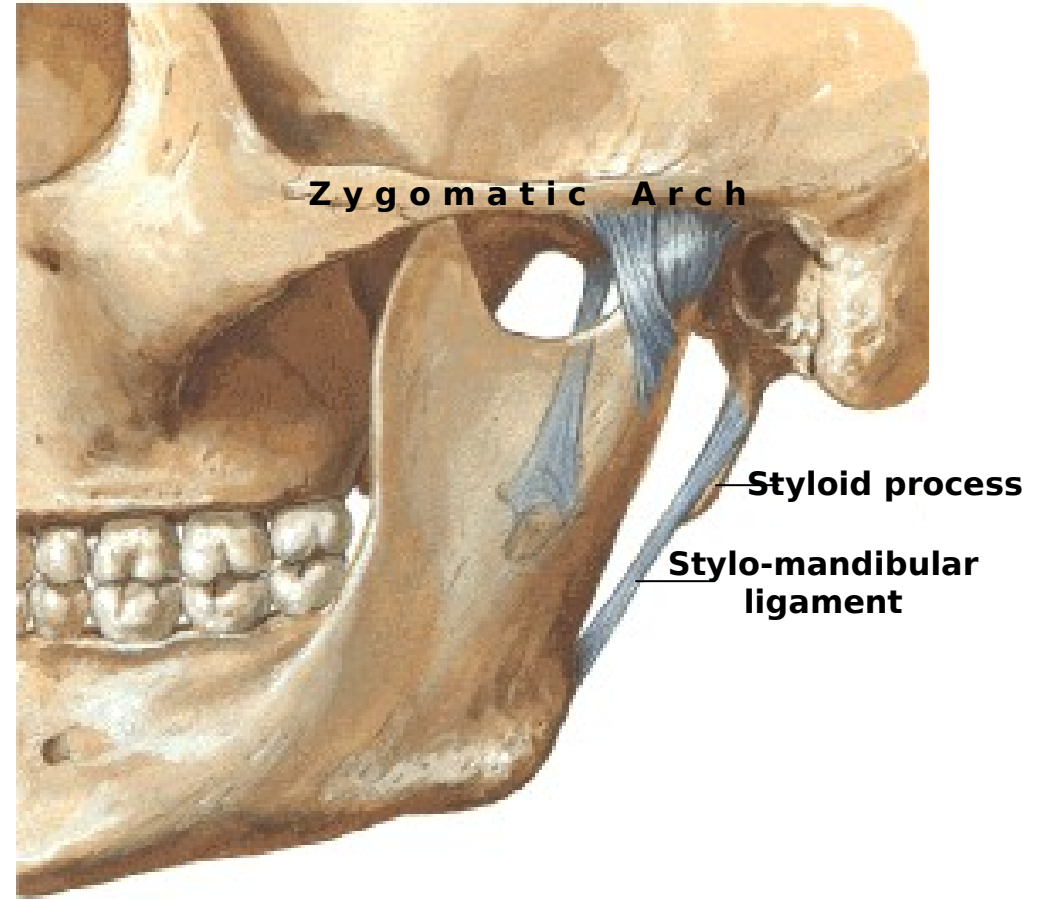


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Capsule



- The gland is ensheathed by a capsule derived from the **deep cervical fascia**
- The **stylomandibular ligament** separates **parotid gland** from **submandibular**



Atlas of human anatomy by Frank H. Netter, 6th Edition

Parotid Inflammation



The parotid gland may become acutely inflamed as a result of bacterial infection from the mouth via the parotid duct or as in mumps.

The gland becomes swollen and painful because the fascial capsule is strong and limits the swelling of the



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Lecture Quiz



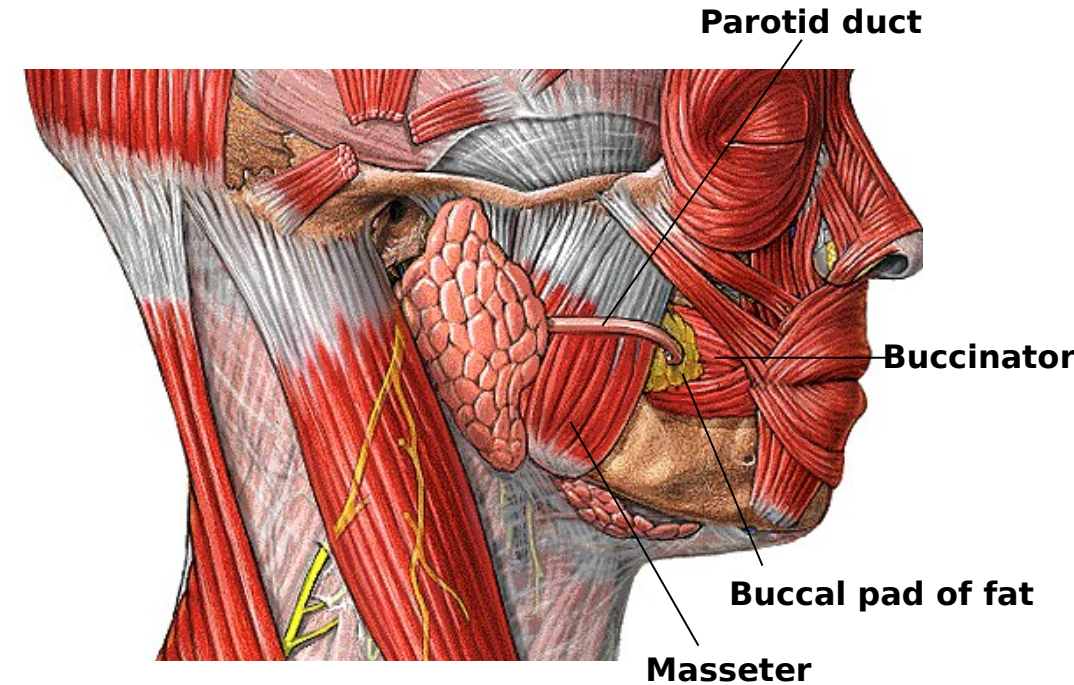
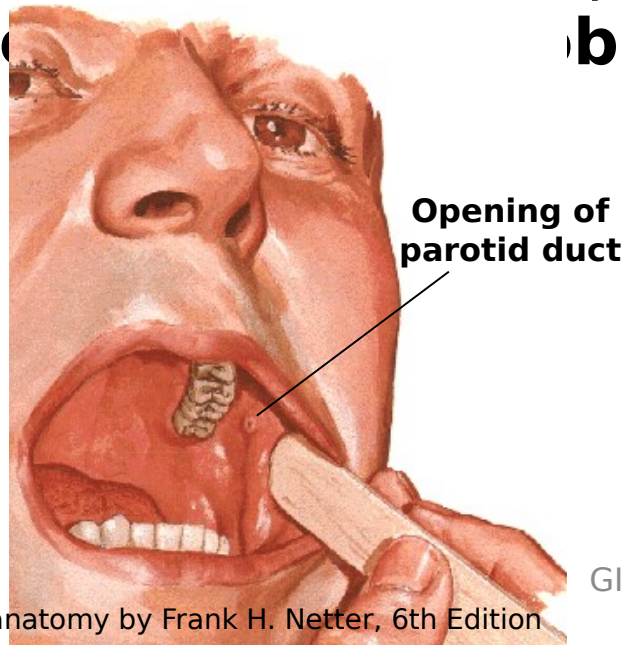
Which of the following structures is the most superficial structure present inside parotid gland?

- a) Retromandibular vein
- b) Facial nerve
- c) External carotid artery
- d) Maxillary artery

Parotid duct



- 3 cm long
- Arises from **anterior border** of the gland
- Runs on **masseter** below zygomatic arch, then **pierce (4B) buccal pad of fat, buccopharyngeal fascia, buccinator & buccal mucosa**
- **Opens into vestibule of mouth** opposite the **upper 2nd molar** in its **course**



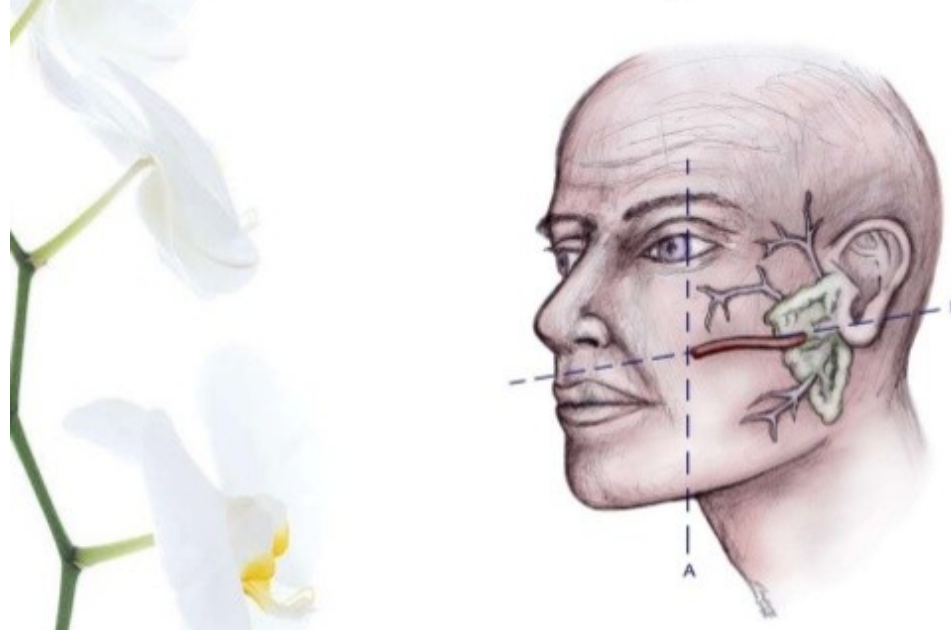
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Parotid duct



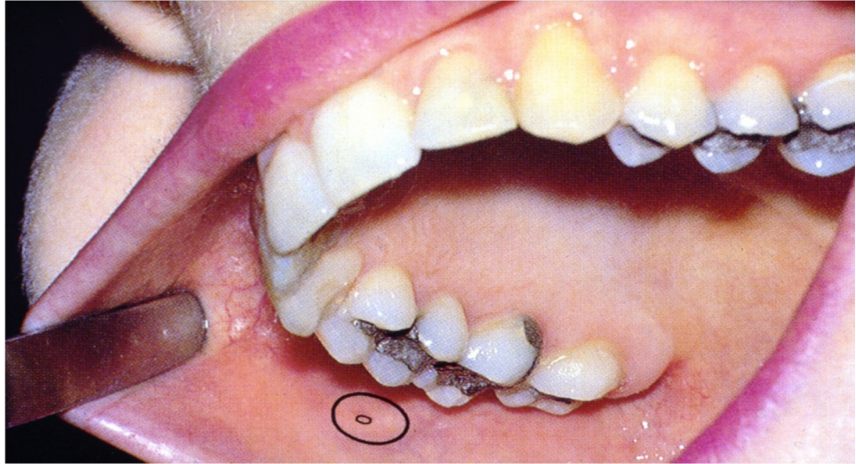
Surface anatomy of the parotid duct

- Represented by **middle $\frac{1}{3}$** of a line between **tragus** and a point midway **bet. ala of nose & upper lip**



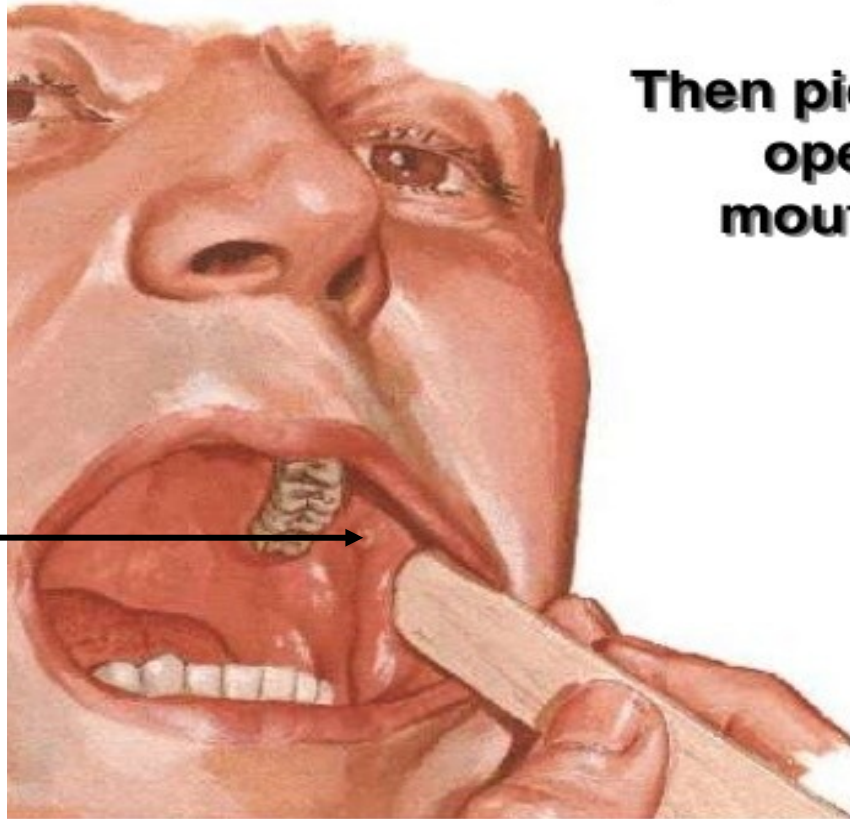
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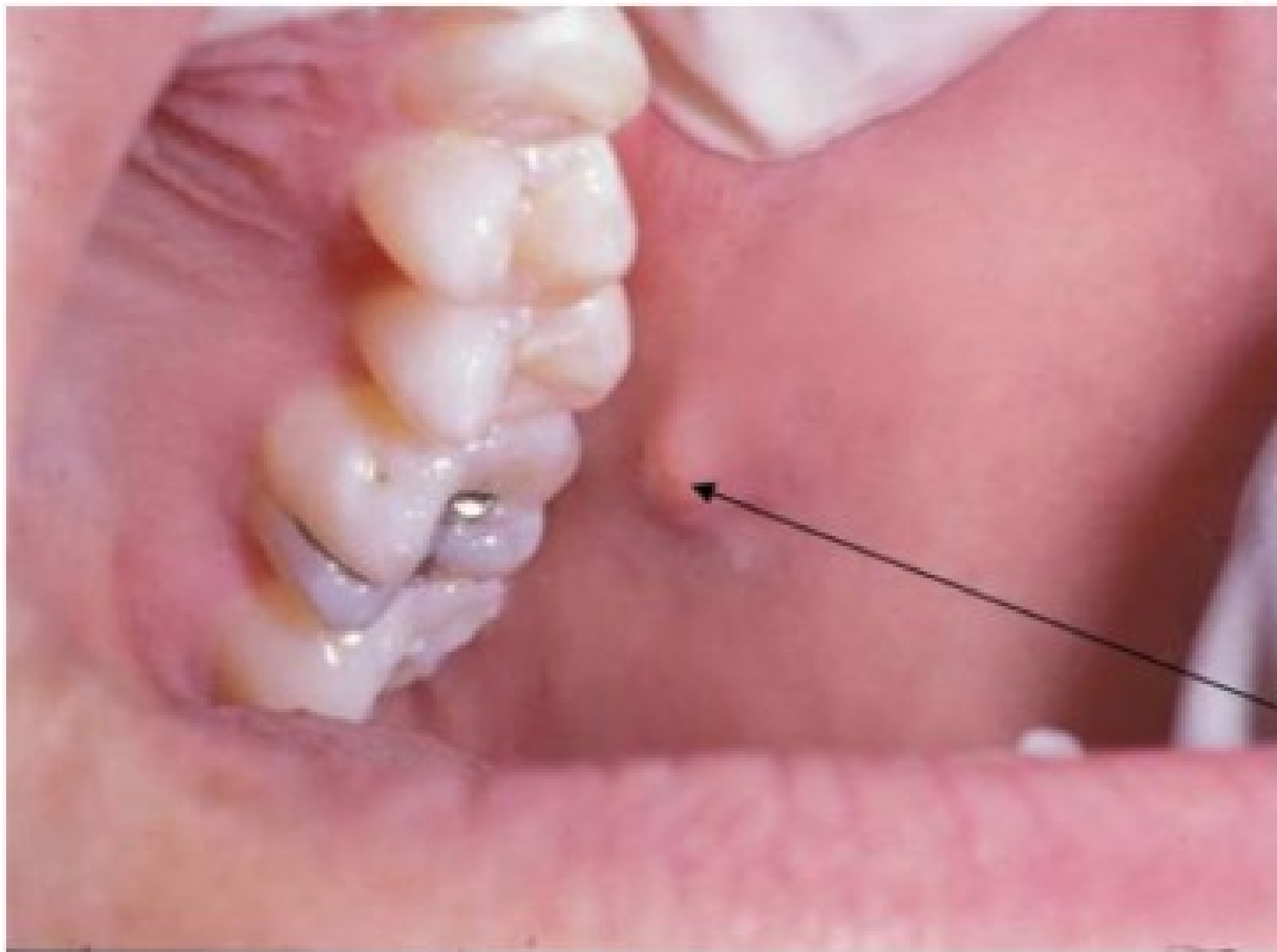
Opening of the parotid duct



Parotid Duct

**Then pierces the buccinator to
open in the vestibule of
mouth, opposite the upper
2nd molar tooth**







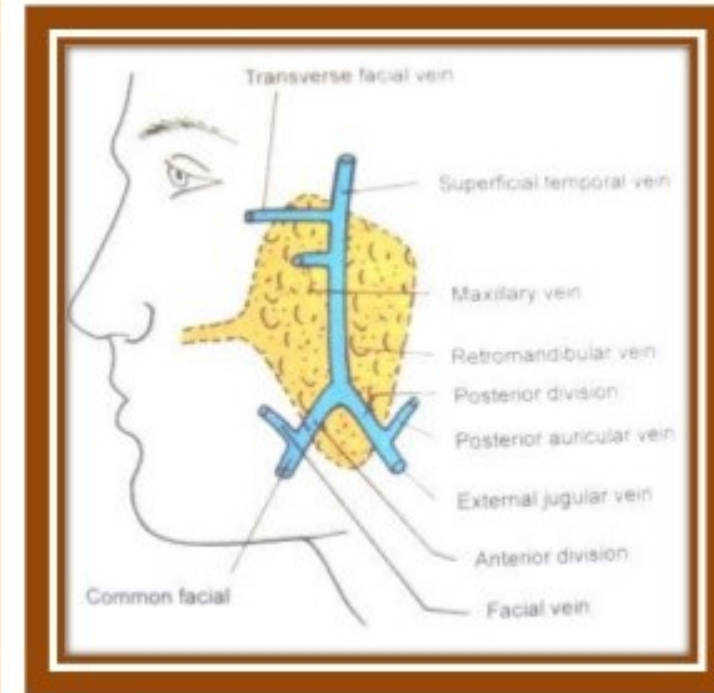
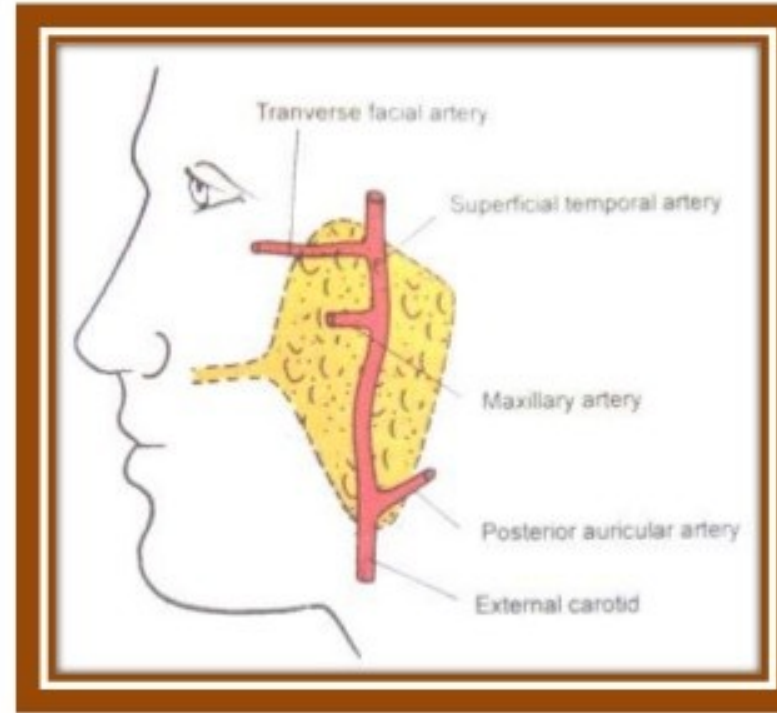
Supply of the gland



- **Arterial supply:**
ECA

- **Venous drainage:**
Retromandibular V

- **Lymph drainage:**
Parotid then cervical
LN

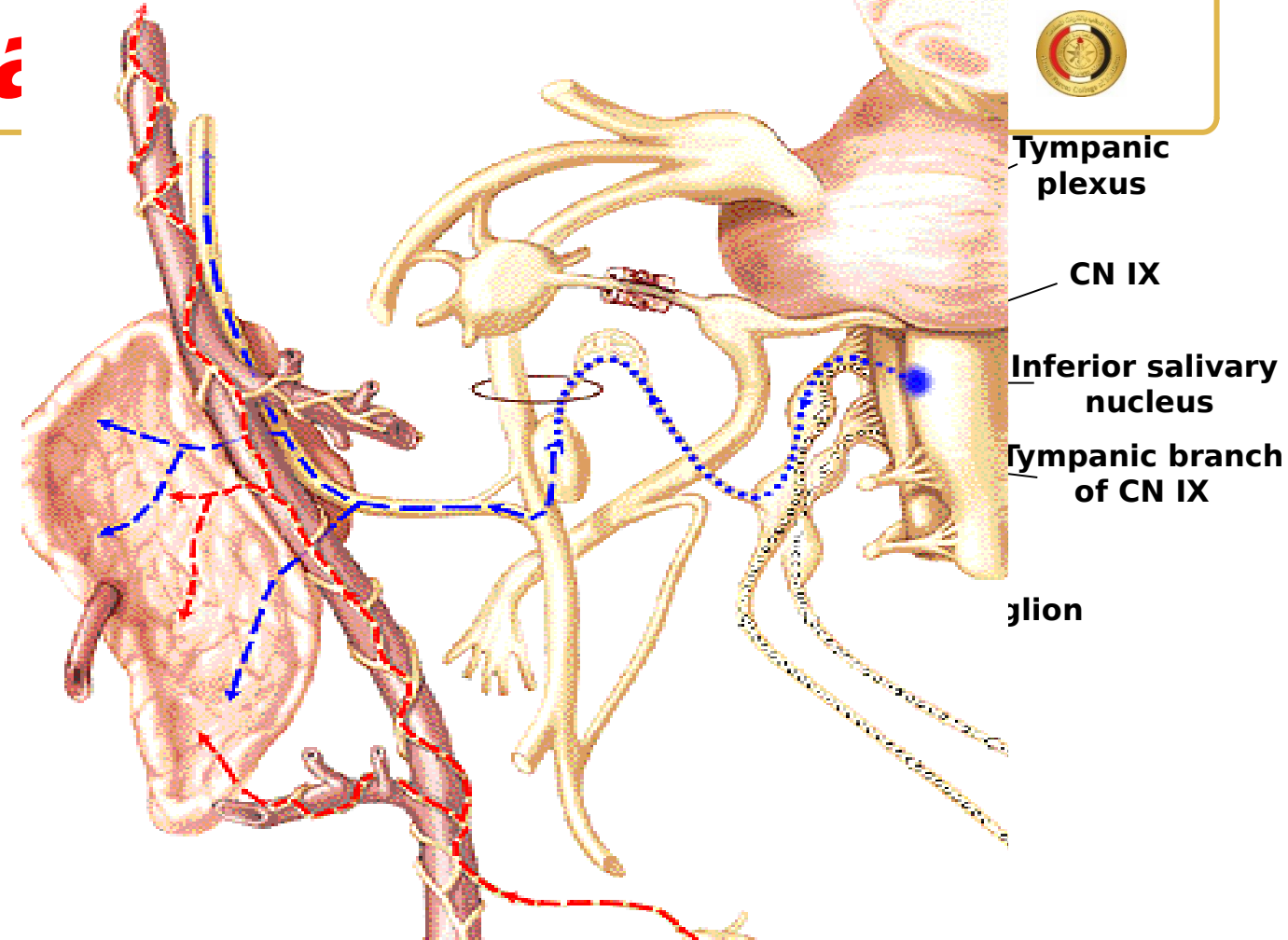


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Supply of the Gl

Nerve supply:

- **Sensory:** auriculotemporal nerve
- **Sympathetic:** plexus around **ECA**
- **Parasympathetic:** postganglionic fibers from the **otic ganglion** carried by the **auriculotemporal nerve**



Atlas of human anatomy by Frank H. Netter, 6th Edition

Preganglionic fibers arise from the **inferior salivary nucleus** in the brain stem, run with **glossopharyngeal nerve**, then through its **tympanic branch** to join the **tympanic plexus**, fibres are then carried by the **lesser petrosal nerve** which leaves through the **foramen ovale** and terminates in the **otic ganglion**

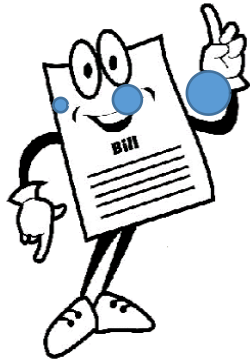
Lecture Quiz



Parotid duct opens in vestibule of mouth opposite

- a) Upper 3rd molar
- b) Upper 2nd molar
- c) Upper premolar
- d) Upper 1st molar

Lecture Summary



Parotid Gland

1. Describe position, shape, surfaces, borders and relations of parotid
2. Recognize structures inside parotid gland and their clinically related problems
3. Describe the course and site of opening of parotid duct
4. Discuss the nerve supply , blood supply and lymphatic drainage of parotid gland

Suggested Readings



- 1. Gray's Anatomy for Students-4th Edition**
- 2. Atlas of human anatomy by Frank H. Netter, 6th Edition**
- 3. Clinical Anatomy for Medical Students, Richard S. Snell**

- For further inquiries **PLZ** feel free to contact at any time through email

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Thank You